

PROCEEDINGS
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NEW SPECIES OF GORYTINI FROM WESTERN
NORTH AMERICA (HYMENOPTERA: SPHECIDAE)

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Descriptions of several new species in three related genera are needed to facilitate a revisional study now in progress. Holotypes are deposited in the Entomology Museum of the University of California at Davis. Paratypes will be distributed as far as possible to the University of California, California Insect Survey, Berkeley; California Academy of Sciences; National Museum of Natural History; and Academy of Natural Sciences at Philadelphia.

***Arigorytes coachellae* Bohart new species**

Male holotype: Length 6.5 mm. Black marked with ivory and red. Ivory are: mandible mostly, two spots on clypeus (one large one in many paratypes), spot on scape, flagellum broadly in front, pronotal ridge and lobe, median scutellar spot, outer apical spots on midfemora and hindfemora, outer stripes on all tibiae, first and last articles of foretarsus, most of basal three articles of midtarsus, undulate apical bands on first five tergites; red are: distal one-half of hindfemur, tinges along tergal bands; wings lightly smoky. Pubescence silvery, conspicuous on clypeus and frons, rather inconspicuous elsewhere except for dense fulvous hair mats covering sternites III to V. Punctuation fine, mostly close, punctures of mesopleuron nearly contiguous, those of propodeum laterally 2 to 4 puncture diameters apart. Least interocular distance about 1.8 times median clypeal length; flagellomere I about 1.5 times as long as broad, equal in length to II and III in front view, propodeal enclosure rather coarsely and obliquely striate, median groove distinct, rest of propodeum without obvious striae; front basitarsus a little more than twice as long as broad, without pecten spines before apex; hindtarsus appearing inflated, all articles much more robust than those of midtarsus; sternaulus complete; sternite VII shiny with scattered macropunctures.

Female: About as in male. Length 5.5 to 7.0 mm, clypeus varying from mostly white to all black, flagellomere I from 1.7 to 1.9 times as long as broad, least interocular distance about 1.3 times as great as median clypeal length, pecten well developed on foretarsus, hind basitarsus stouter than mid basitarsus but less markedly so than in male.

Material: Holotype male (UCD), Borrego Valley, San Diego Co., CALIFORNIA, 26 March 1959 (R. M. Bohart). Paratypes, 23 male and 9 female topotypes. Other paratypes, from CALIFORNIA, 36 males, 24 females, Mono Co.: Paradise Camp; Inyo Co.: Surprise Canyon, Towns Pass, Westgard Pass, Big Pine, Lone Pine, Brown; San Benito Co.: Pinnacles; San Bernardino Co.: Apple Valley, Morongo Valley, Llano, Kramer Hills, Phelan; Ventura Co.: Hungry Valley near Gorman; San Luis Obispo Co.: Simmler; Kern Co.: near Inyokern, 18 mi. w. Bakersfield; Riverside Co.: near Whitewater, Palm Springs, Thousand Palms Canyon, Lost Palm Canyon, Joshua Tree National Monument, near Blythe, San Jacinto Mts.; San Diego Co.: near Buckman Springs. Not types, 5 females, Wendover, NEVADA (G. Bohart); Florence Junction, Pinal Co., ARIZONA (T. Haig); Delta, COLORADO (U. Lanham); Sierra San Pedro Martir, Baja California, MEXICO (J. Powell).

The present species differs as indicated in the key.

***Arigorytes ruficrus* Bohart new species**

Male holotype: Length 6.5 mm. Black marked with ivory, hindleg extensively red. Ivory are: spot on mandible base, clypeus except free rim and transverse basal spot, scape partly, pronotal ridge narrowly, pronotal lobe, median scutellar spot, outer apical spot on forefemur, foretibia, midtibia and tarsi in front, narrow apical bands (enlarged laterally) on tergites I to VI; reddish are: flagellum in front, distal three-fourths of hindfemur, practically all of hindtibia; wings lightly smoky. Pubescence pale and inconspicuous except for dense fulvous hair mats covering sternites III to V. Punctuation fine, mostly close, punctures of mesopleuron mostly separated by a puncture's diameter, those of propodeum laterally by 5 or 6 diameters. Least interocular distance slightly more than twice median clypeal length; flagellomere I about 1.5 times as long as broad, equal in length to II or III in most views; propodeal enclosure finely and longitudinally striatopunctate, median groove linear, rest of propodeum without obvious striae; front basitarsus about 3.0 times as long as broad, with three pecten spines before apex, some of spines longer than breadth of basitarsus; hindtarsus appearing inflated, all articles much more robust than those of midtarsus; sternaulus absent; sternite VII micropunctate and with a few scattered macropunctures.

Female: About as in male. Length 7.5 mm, clypeus all black, flagellum ivory to pale fulvous in front, mandible and tergite VI all dark. Flagellomere I about 1.7 times as long as broad; least interocular distance a little greater than median length of clypeus; hind basitarsus stouter than mid basitarsus, but less markedly so than in male.

Material: Holotype male (UCD), Sagehen Creek, near Hobart Mills, Nevada Co., California, 1 July 1964, (M. E. Irwin). Paratypes, 5 male and 4 female topotypes (M. Irwin, R. Bohart). Other paratypes, 1 male and 6 females from CALIFORNIA: Donner Pass, Nevada Co. (J. Powell); Yuba Pass, Sierra Co. (M. Irwin); Sattley (R. Bohart); near Clio (J. E. Slansky); Independence Lake, Sierra Co. (R. Bohart); Carnelian Bay, Lake Tahoe, Placer Co. (R. Bohart). Type series collected from 23 June to 11 July, all at elevations of 5,000 to 7,000 feet in the central Sierra.

The differentiating characteristics of *ruficrus* are indicated in the following key.

Key to the species of *Arigorytes* Rohwer

1. Male front basitarsus less than twice as long as broad, usually white in front with black spot on outer apical angle; female flagellomere I less than 1.5 times as long as broad; male hindtarsus much stouter than midtarsus 2
 - Male front basitarsus more than 2.0 times as long as broad, usually all pale or all dark in front; female flagellomere I at least 1.5 times as long as broad 3
2. Mesopleural pubescence fine, inconspicuous, somewhat fulvous, abdominal and leg markings essentially black and yellow or whitish, hindfemur all black or practically so (Pacific Coast) *insolitus* (W. Fox)
 - Mesopleural pubescence coarse, silvery; abdominal and leg markings usually extensively red (California) *coquilletti* (W. Fox)
3. Male hindtarsus not much stouter than midtarsus; female with least interocular distance less than twice median clypeal length, and female abdomen not marked with red dorsally; propodeum coarsely striate laterally (Pacific states and Idaho) ... *smohalla* Pate
 - Male hindtarsus much stouter than midtarsus; female least interocular distance more than twice median clypeal length, or female abdomen with at least some red dorsally 4
4. Male front basitarsus with 2 or 3 long bristles before apex; female least interocular distance more than twice median clypeal length; hindtibia usually without yellow or whitish; sternaulus in female practically absent (central Sierra of California) ... *ruficrus* R. Bohart
 - Male front basitarsus without obvious bristles before apex; female least interocular distance less than twice median clypeal length; hindtibia usually whitish posteriorly; sternaulus complete (California, Utah, Arizona, Baja California) *coachellae* R. Bohart

Gorytes limbellus Bohart new species

Male holotype: Length 9.5 mm. Black marked with yellow as follows: mandible mostly, labrum, clypeus, lower frons, scape mostly, pronotal ridge, spot on lobe, two mesopleural spots, band across scutellum,

large spots on propodeal cheeks, legs extensively but on brown hindtarsus only an inferior stripe on basal article, posterior bands on tergites I-VI and sternites II-V, tergal bands with anterior edge irregularly incurved on I-II, more squarely and broadly emarginate in III-VI; wings lightly stained, stigma yellow, marginal cell light brown. Pubescence silvery to off-silvery, inconspicuous, longer hairs of propodeum about 1.5 times as long as diameter of midocellus. Punctation mostly fine, weak, macropunctures small and well separated, imparting a feebly granulate appearance to clypeus, frons, and propodeal cheeks. Flagellum with cariniform tyloides beneath from apex of article I to base of article X; least interocular distance about equal to eye breadth, clypeus nearly twice as broad as long, subantennal sclerite as broad as high; metapleural suture pitted above; propodeal enclosure completely, coarsely, longitudinally carinulate.

Female: About as in male. Length 11 mm. Pedicel yellow in front, clypeus with black apical rim, metanotum yellow banded, hindtarsus mostly yellow, pygidium yellow except at tip. Clypeus 2.5 times as broad as long, flagellomere VIII about 1.7 times as broad as I, flagellomere VI nearly as broad as median length; pygidium sparsely striatopunctate, sides angled at about 45 degrees.

Material: Holotype male (UCD), Samuel Springs (now Lake Berryessa), Napa Co., CALIFORNIA, 9 May 1955 (R. M. Bohart). Paratypes (all from CALIFORNIA), 25 males, 11 females (two females carrying nymphal cicadellids), Mendocino Co.: Calpella; Lake Co.: Lakeport, Lower Lake, Blue Lakes, Cache Creek, Hopland Grade; Sierra Co.: Sardine Lakes; Nevada Co.: Boca; Placer Co.: Dutch Flat; Napa Co.: Samuel Springs; Contra Costa Co.: Mt. Diablo; Alameda Co.: Tesla; Mariposa Co.: Briceburg; Tulare Co.: Sequoia National Park, Kaweah; Ventura Co.: near Gorman, Quatal Canyon; Riverside Co.: Riverside, The Gavilan. Paratype dates range from April to June in the lowlands, June through July in the Sierra.

Paratypes vary slightly in extent of yellow markings. Some specimens have the anterior yellow margins of the tergites more V-shaped on tergites I-II and more roundly emarginate on III and following. A few specimens show weak reticulation on the propodeum.

G. limbellus seems closest to *G. flagellatus* which also has male flagellomeres I-X with carinate tyloides. *G. limbellus* differs by the yellow-marked mandibles and much less coarsely sculptured propodeum. In the female the clubbed antennae, slightly narrower pygidium and dark hindtarsi are distinguishing, also. In the male the subantennal sclerite is higher (longer).

***Gorytes flagellatus* Bohart new species**

Male holotype: Length 10 mm. Black marked with yellow as follows: labrum, clypeus except apical band, scape in front, pronotal ridge, spot on lobe, an upper mesopleural spot, band across scutellum, spots

high on propodeal cheeks, legs extensively but only an inferior basal stripe on dark brown hindtarsus, posterior irregular bands on tergites I-VI and sternites II-IV, tergal bands irregular anteriorly, V-notched on I; wings lightly stained, stigma orange-yellow, marginal cell brown. Pubescence pale to fulvous; longest on frons, propodeum and interocellar area where it may reach 2.0 times as long as diameter of midocellus. Punctuation mostly fine, macropunctures small and sparse, clypeus and frons granulate. Flagellum with cariniform tyloides beneath from apex of article I to base of X; least interocular distance about equal to eye breadth, clypeus about 1.8 times as broad as long, subantennal sclerite 1.4 times broader than high; metapleural suture pitted above; propodeal enclosure with complete, coarse, slightly irregular, longitudinal striae; rest of propodeum coarsely reticulate.

Female: About as in male. Length 11 mm. Clypeus entirely black, flagellomeres I-V or VI reddish within, tarsi mostly dark, pygidium from half to all black. Clypeus 2.6 times as broad as long, subantennal sclerite nearly twice as broad as high, flagellum nearly cylindrical, article VIII as broad as I, article VI twice as long as broad, pygidium with irregular but mostly well separated punctures, sides angled at about 40 degrees.

Material: Holotype male (UCD), Sagehen, Nevada Co., CALIFORNIA, 26 August 1952 (R. F. Smith). Paratypes, 14 males, 6 females, Sagehen, CALIFORNIA; Moran and Snake River near Elk, WYOMING; Moscow Mt., IDAHO; Lamoille Canyon near Elko, NEVADA; Bly Mt., Klamath Co., OREGON.

The black mandibles and coarsely sculptured propodeum differentiate this species from *limbellus*. Other features are the all black clypeus and cylindrical flagellum in the female as well as the low subantennal sclerite in the male. The presence of tyloides on flagellomeres I-X of the male distinguish the species from all others in North America except *limbellus*.

Gorytes prosopis Bohart new species

Female holotype: Length 11 mm. Black marked with yellow as follows: mandible basally, labrum medially, clypeus with 2 small discal spots and basolateral curved spots, lower orbital stripes and subantennal dot, antenna within to base of last article, pronotal ridge, anterolateral scutal spot, 2 mesopleural spots, scutellum mostly, large spots on propodeal cheeks, legs extensively (hindtarsus mostly brown), posterior bands on tergites I-V and sternite II, lateral spots on sternites III-V; wings lightly brown stained, stigma orange, marginal cell brown. Pubescence pale to fulvous, inconspicuous, longer hairs of propodeum about equal to diameter of midocellus. Punctuation mostly fine but rather coarse and uneven on clypeus; propodeal cheeks granulate and a little microstriate, frons finely granulate. Clypeus appearing swollen, nearly 3 times as broad as long; least interocular distance twice clypeal length and 1.5

times eye breadth; subantennal sclerite 1.7 times as broad as long; metapleural suture pitted above; propodeal enclosure completely, longitudinally striate; flagellum slender, gradually enlarged toward article VIII which is 1.5 times as long as broad in lateral view and 1.5 times as broad as article I, last-named article fully 4 times as long as broad; pygidium striatopunctate with intervening areas microsculptured, sides angled at 45 degrees.

Material: Holotype female (UCD), Samuel Springs (now Lake Berryessa), Napa Co., CALIFORNIA, 13 May 1956 (R. M. Bohart). Paratypes, 8 females from CALIFORNIA: Lake Co.: Cache Creek; Mono Co.: June Lake; Nevada Co.: Sagehen Creek; Santa Clara Co.: San Antonio Valley; Santa Cruz Co.: near Sequel; Los Angeles Co.: Tanbark Flat; San Bernardino Co.: Lake Arrowhead; Riverside Co.: Tahquitz Canyon; 1 female from Oregon: Lake Co.: Drake Peak.

Paratypes vary in facial markings but all have 5 to 8 yellow spots or stripes on the clypeus and frons. Most of them have 2 small spots on the clypeus and a narrow basal cross stripe. All have the pygidium black and the Oregon specimen has tergite V black as well. Most characteristic is the slender antenna, gradually and slightly clubbed, and lemon yellow in front to the base of the terminal article. The swollen appearance of the clypeus, broad frons at its narrowest point, black pronotal lobe, moderately roughened propodeum except for the completely striate enclosure, and the striatopunctate pygidium with considerable microsculpture are distinguishing features, also.

***Gorytes umatillae* Bohart new name**

Gorytes vicinus Handlirsch, 1893, preoccupied by Lepeletier, 1832.

This species, of which I have seen the holotype female, has whitish markings and moderately roughened propodeum. The male resembles *albosignatus* W. Fox except for the less sculptured propodeum. The female is similar to *atrifrons* W. Fox but has pygidial punctures well spaced apically. I have seen specimens from Washington, Wyoming and Colorado.

***Gorytes cochisensis* Bohart new species**

Female holotype: Length 10 mm. Black marked with yellow as follows: mandible basally, clypeus, subantennal sclerite and lower orbits, antenna in front but turning pale reddish on flagellum, pronotal ridge and lobe, upper mesopleural spot, lateral scutal dot, band across scutellum, small spots high on propodeal cheeks and a small dot on each side below, legs extensively but edged with reddish, transverse apical bands on tergites I-V and sternites II-III, those on tergites I-II broadly V-shaped anteriorly; wings lightly yellowed except for brown marginal cell and light orange stigma. Pubescence mostly very short, inconspicuous, pale to fulvous (on scutum), longer hair of propodeum about 0.5 midocellus diameters. Punctures moderate to large; sparse on scutum, pleuron, pro-

podeum; mostly separated by a puncture diameter on clypeus, frons, across middle of tergites, on sternites; dense toward apices of tergites II-IV. Clypeus moderately convex, fully half as long as broad; least interocular distance slightly more than clypeal length and 0.7 times eye breadth; subantennal sclerite 1.5 times as broad as long; metapleural suture finely pitted below, coarsely above; longitudinal striae of propodeal enclosure shallow and fading out posteriorly; flagellum clubbed, article VIII a little broader than long, twice as broad as I which is 2.5 times as long as broad; pygidium coarsely and fairly closely striatopunctate, sides angled at 45 degrees.

Male: About as in female. Flagellum all dark, scutum with 2 lateral dots, pleuron more yellow, a pair of large spots on propodeal cheeks. Clypeal length 0.7 times breadth and greater than least interocular distance which is 0.6 times eye breadth; subantennal sclerite as long as broad; flagellum with tyloides beneath from apex of I to base of VI; flagellomeres II-V noticeably convex beneath in profile, I about 1.6 times as long as broad, VIII about as long as broad; propodeal enclosure broadly smooth posteriorly except for median groove.

Material: Holotype female (UCD) 9 miles west of Portal, Cochise Co., ARIZONA, 5 June 1959 at flowers of *Senecio longilobus* (L. A. Stange collector). Paratypes, 1 male, Prescott, ARIZONA, July 1947 (R. M. Bohart, UCD); 1 male, E. Verde River, nw. of Payson, ARIZONA, 15 June 1968 (Flint and Menke, USNM).

The coarse punctation of the clypeus, frons, pleuron, propodeum and abdomen distinguish this species from all others described from North America. In some respects it resembles species of *Pseudoplisus* but the propodeal enclosure is plainly striate towards the base.

Hapalomellinus pulvis Bohart new species

Female holotype: Length 5 mm. Black with extensive red and some ivory markings. Red are: pronotum partly, metapleuron, propodeum except dorsally, legs mostly, abdominal segments I-III mostly; pale red are: flagellomeres broadly in front; ivory are: mandible basally, clypeus laterally and apically, scape in front, foretarsi mostly, other tarsi partly, forewing basally, moderately wide apical bands on tergites I-III; wings nearly clear, stigma brown. Pubescence appressed and dense over much of body, snowy white on clypeus, lower frons, genae, mesopleuron, inferior propodeal lobes, coxae, apical bands on abdominal segments I-III (covering ivory tergal bands), large apicomedial spots on tergites IV-V; pubescence becoming yellowish brown on upper frons, vertex and scutum; light brown on pronotum, scutellum and metanotum, tan and fine but completely covering propodeal dorsum, yellowish but inconspicuous on sides of propodeum and bases of tergites I-III, minute and nearly black on abdominal segments IV-V (except white tergal spots). Punctuation mostly inconspicuous and obscured by pubescence; frons and interocellar area with irregular macropunctures; propodeal enclosure

polished beneath pubescence. Clypeal length about one-third breadth, one-half least interocular distance which is about equal to eye breadth; flagellomere I a little longer than broad and slightly longer than II-IX which are about as broad as long; pygidium polished, with scattered large punctures, apex rounded, sides angled at about 45 degrees.

Male: About as in female. Areas of brownish pubescence in female much less deeply colored in male, more yellowish gray. Flagellomeres VIII-X with undersurface only faintly depressed, VIII as broad at middle as long.

Material: Holotype female (UCD), 18 miles north of Rodeo, Hidalgo Co., NEW MEXICO, 25 August 1958 (R. M. Bohart). Paratypes, 19 males, 13 females from NEW MEXICO: Rodeo to 18 mi. north of Rodeo (P. D. Hurd, C. G. Moore, P. M. Marsh, J. G. Rozen, M. Statham, S. J. Hessel, M. A. Cazier, M. Mortenson, D. D. Linsdale), 5 mi. east of Las Cruces (R. W. Thorp); 5 males, 3 females from ARIZONA: Willcox, on *Euphorbia* (R. M. Bohart); 2 males, 12 females from CALIFORNIA: 18-20 mi. west of Blythe, on *Pectis papposa* (F. D. Parker, J. W. MacSwain, R. M. Bohart). Paratype dates were August 18 to September 23 in New Mexico, August 14 in Arizona, October 14 to 17 in California (all 1958).

The brownish notal pubescence is subject to some variation: California specimens are least deeply colored. The clypeal integument is occasionally all white in both sexes or with the white reduced to two spots.

The pubescent propodeal enclosure, mostly red tergites I-III and only faintly depressed male flagellomere VIII separate *pulvis* from the two other known species of the genus. There are many other differences, however, as indicated in the following key:

Key to the species of *Hapalomellinus*

1. Propodeum with a dense whitish fringe of appressed hair bordering enclosure which is at most feebly pubescent; tergites I-II (or only II) mostly red; female tergite IV mostly black pubescent; male clypeal integument black or mostly so; no definitive male pygidium (sw. U.S., Mexico) *albitomentosus* (Bradley)
- Propodeum not fringed around enclosure, tergites I-III or more mostly red; male clypeal integument not mostly black 2
2. Thorax almost wholly red; clypeal integument yellow; discrete punctures of frons and interocellar area inconspicuous; notal pubescence inconspicuous; female tergite IV with a weak pubescent band; male pygidium definitive, similar to that of female (se. Calif., Yuma and Tucson, Ariz., in October) *teren* Pate
- Thorax partly black; clypeal integument at least partly white; discrete punctures of frons and interocellar area conspicuous; notal pubescence abundant and yellowed or brownish; female tergite IV with a prominent white pubescent spot; no definitive male pygidium (New Mexico to se. Calif.) *pulvis* R. Bohart

LITERATURE CITED

- FOX, W. J. 1892. New North American species of *Gorytes*. Canad. Ent. 24: 149-154.
- HANDLIRSCH, A. 1893. Neue Arten der Gattung *Gorytes* Latr. Ann. Naturhist. Mus. Wien 8: 277-282.